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EXAMINER

PAK, SUNG H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Applicants' response filed 12/03/2008 has been carefully reviewed by the examiner.

Information Disclosure Statement

Information disclosure statement (IDS) filed 1/07/2009 has been considered by the examiner. In view of the information submitted in the IDS, a new ground of rejection is presented in this office action, and the office action is made final. See also the Conclusion section of this office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 8-11, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,008,871 to Okumura (hereinafter "Okumura").

Okumura discloses a liquid crystal apparatus comprising: a first substrate 404 (Fig. 4): a second substrate 403; a reflective polarizer 405, mounted on the first substrate 404 and having a first transmission axis and a first reflection axis at right angles to each other, for transmitting linearly polarized light vibrating in a plane parallel to the first transmission axis and for reflecting linearly polarized light vibrating in a plane parallel to the first reflection axis; a

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polarizer 401, mounted on the second substrate 403 and having a second transmission axis, for transmitting linearly polarized light vibrating in a plane parallel to the second transmission axis; a liquid crystal layer 408/409 provided between the first and second substrates, and having a first mode which causes the direction of polarization of incident light to change by utilizing birefringence (as shown in liquid crystal 409 of Fig. 4) and a second mode which does not utilize birefringence and therefore does not cause the direction of polarization of incident light to change (as shown in liquid crystal 408 of Fig. 4), wherein a display state is switched between a bright display state and a dark display state by applying a voltage to the liquid crystal layer 408/409, and the bright display state is produced by driving the liquid crystal layer in the second mode (Fig. 4);

wherein the bright display state is produced by causing ambient light 411 entering the liquid crystal layer through the second transmission axis of the polarizer 401 to be reflected at the reflective polarizer 405 and by allowing the reflected light to return through the liquid crystal layer 408 and emerge from the polarizer 401;

wherein the liquid crystal layer 408 maintains one of the first and second stable states in the absence of an applied voltage, and one of the first and second stable states is set as the second mode (without using birefringence mode);

wherein in the second stable state, liquid crystal molecules 408 are aligned in a direction substantially parallel to the second transmission axis (Fig. 4);

further comprising an illuminating apparatus 406 mounted outside the reflective polarizer 405, and the liquid crystal layer 408 is driven in the second mode with the illuminating apparatus 406 turned off;

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comprising an illuminating apparatus 406 mounted outside the reflective polarizer 405, and the liquid crystal layer 408 is driven in the second mode with the illuminating apparatus 406 turned on;

wherein the bright display state is produced by allowing light 413 emitted from the illuminating apparatus 406 and entering the liquid crystal layer 408 through the first transmission axis of the reflective polarizer 405 to pass through the second transmission axis of polarizer 401 and emerge on a viewer side;

wherein the first transmission axis and the second transmission axis are arranged at parallel to each other (Fig. 4);

wherein the illuminating apparatus 406 is provided with a reflective layer 405 for reflecting a portion of light.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 6-7, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,008,871 to Okumura.

Okumura discloses a liquid crystal display device as discussed above.

Regarding claim 3, Okumura does not explicitly disclose the first transmission axis and second transmission axis arranged at right angles to each other. However, arranging transmission axes of various optical layers (such as, arranging at right angles to each other) to achieve optimal light output is well known in the art. Such arrangement is considered advantageous and desirable because it allows for optimum display brightness and increases display efficiency. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Okumura to have first and second transmission axis arranged at right angles to each other as claimed.

Regarding claims 6-7, Okumura does not explicitly disclose the use of liquid crystal molecules in a state that is 45 degrees slanted as claimed. On the other hand, the use of liquid crystal molecules with 45 degrees slant is well known and common in the liquid crystal display art. 45 degree orientation is well known to be advantageous and desirable in the liquid crystal art because it allow for multi-domain liquid crystal configuration, and yields liquid crystal displays with wider viewing angles. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Okumura to have liquid crystal molecules oriented at 45 degree angles.

Regarding claims 12-13, Okumura does not explicitly disclose the light absorbing layer disposed between the reflective polarizer and illuminating apparatus as claimed in the present

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application. On the other hand, the use of absorbing layers in liquid crystal display for conditioning the output light of the illuminating light source is well known and common in the art. Such light absorbers are commonly used in the art to effectively control the output light characteristics of a light source without changing the light source itself. Therefore, it would have been obvious to a person of ordinary skill in the art to modify the device of Okumura to have light absorbing layer as claimed in the present application.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 1/07/2009 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUNG H. PAK whose telephone number is (571)272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571)272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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